

Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
60V	5.5mΩ@10V	100A
	8.5mΩ@4.5V	



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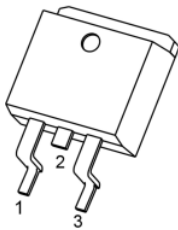
Feature

- Fast Switching
- Low Gate Charge and Rds on
- Low Reverse transfer capacitances
- 100% Single Pulse avalanche energy Test

- Power switching application
- Hard switched and high frequency circuits
- Uninterruptible power supply

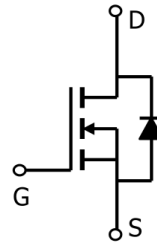
Applications

Package

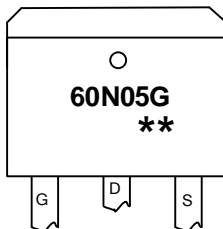


TO-263(G:1 D:2 S:3)

Circuit diagram



Marking



60N05G : Product code
 ** : Week code.

Order Information

Device	Package	Unite/Tape
SP60N05GTD	TO-263-3L	800

Absolute maximum ratings (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DSS}	60	V
Gate-Source Voltage	V _{GSS}	±20	V
Continuous Drain Current(Tc=25°C)	I _D	100	A
Pulse Drain Current Tested	I _{DM}	400	A
Single Pulse Avalanche Energy ¹	E _{AS}	289	mJ
Maximum Power Dissipation(Tc=25°C)	P _D	105	W
Thermal Resistance-Junction to Case	R _{θJC}	1.19	°C/W
Maximum Junction Temperature	T _J	-55 to 150	°C
Storage Temperature Range	T _{STG}	-55 to 150	°C

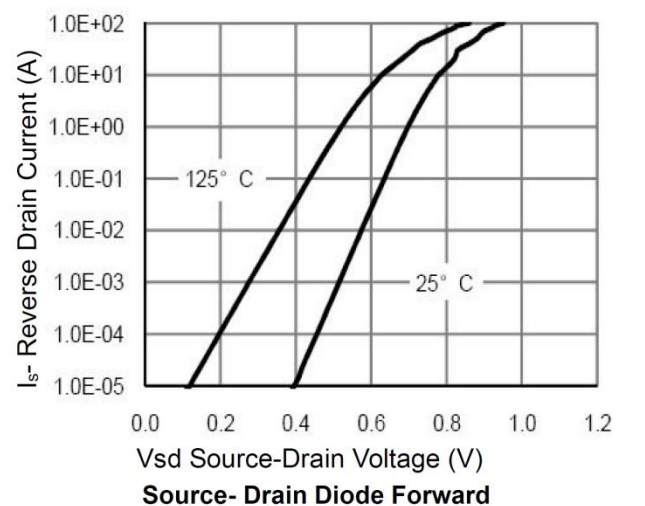
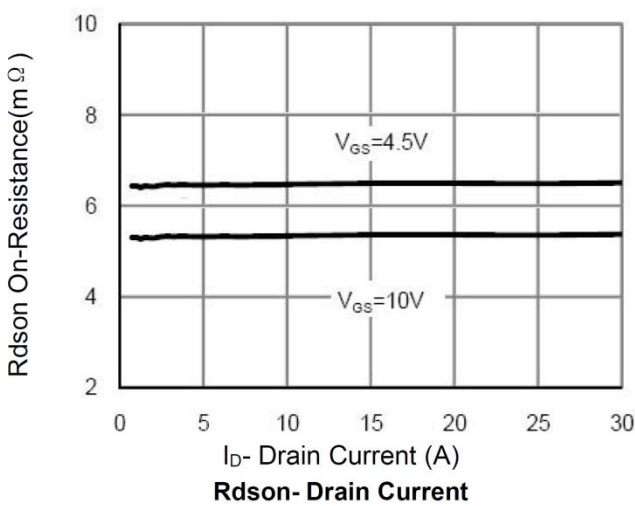
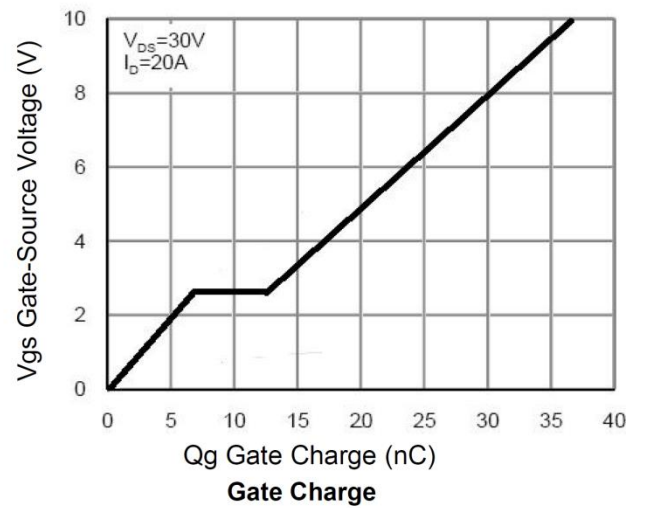
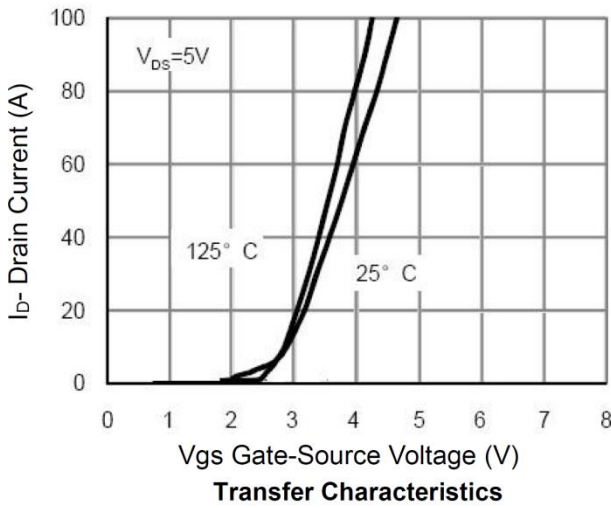
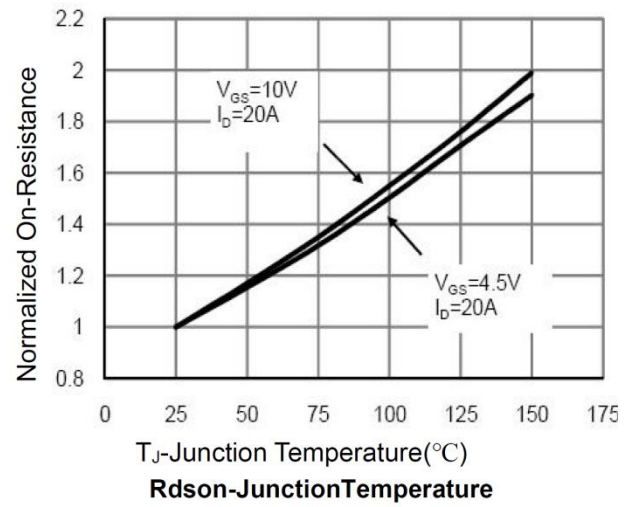
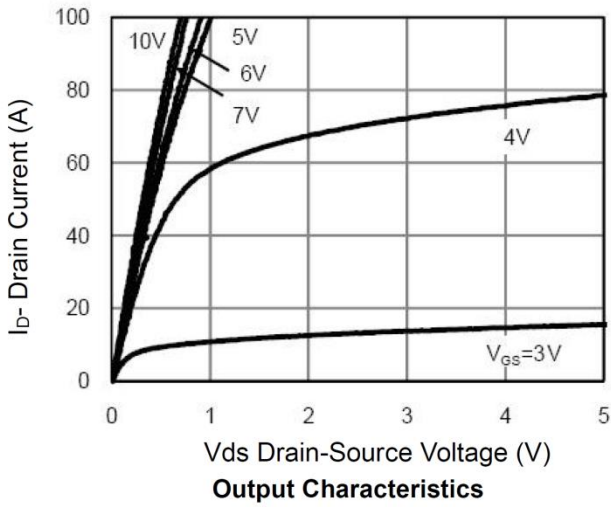
Electrical characteristics (Ta=25°C, unless otherwise noted)

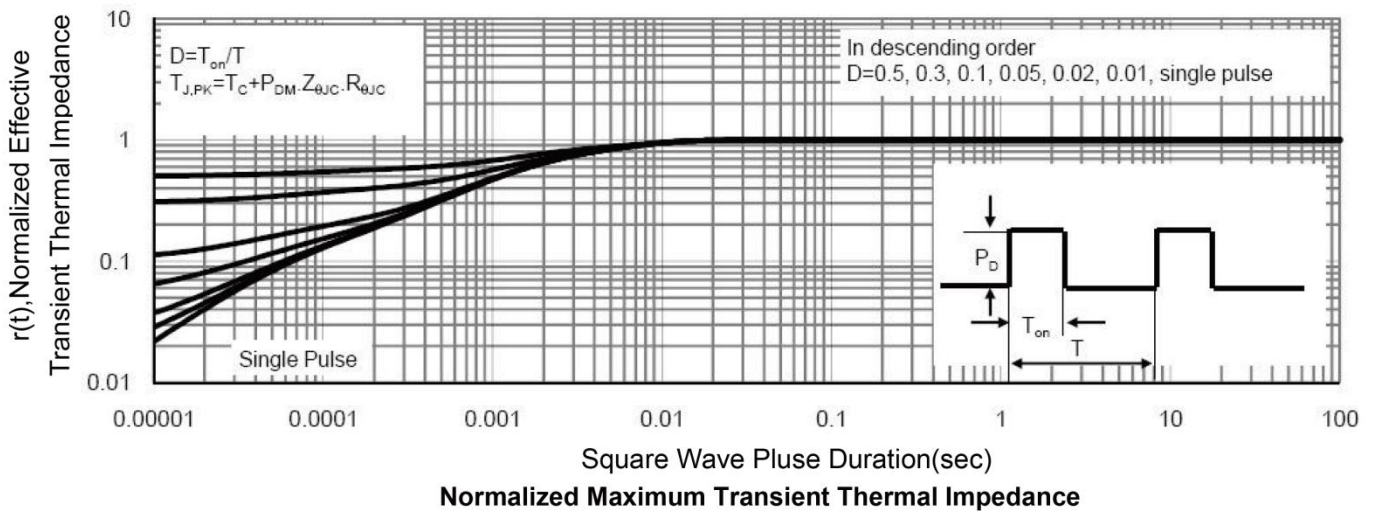
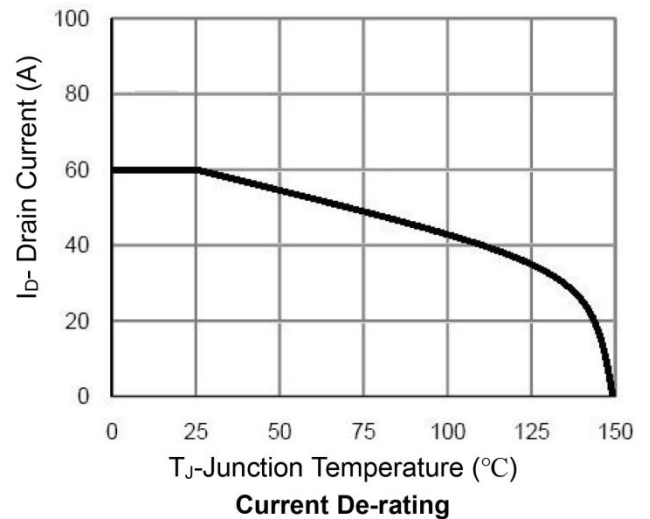
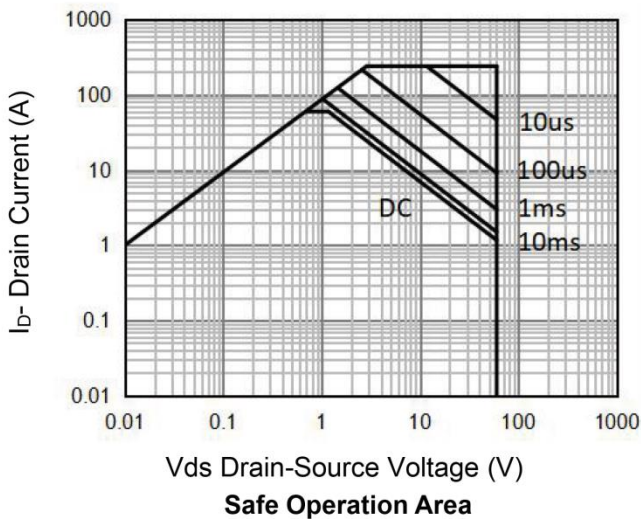
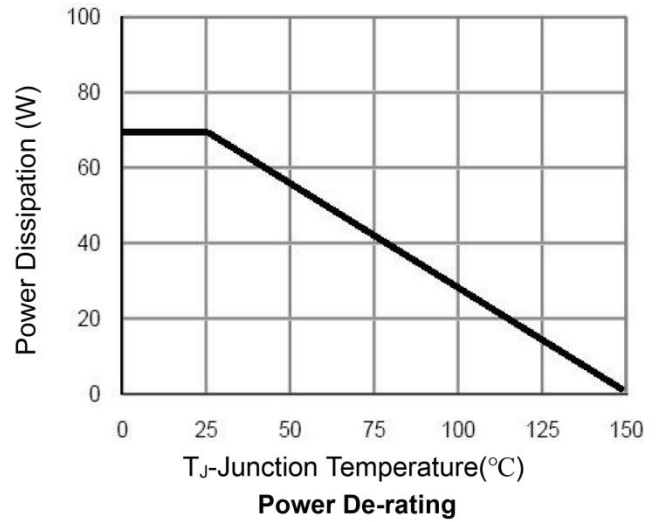
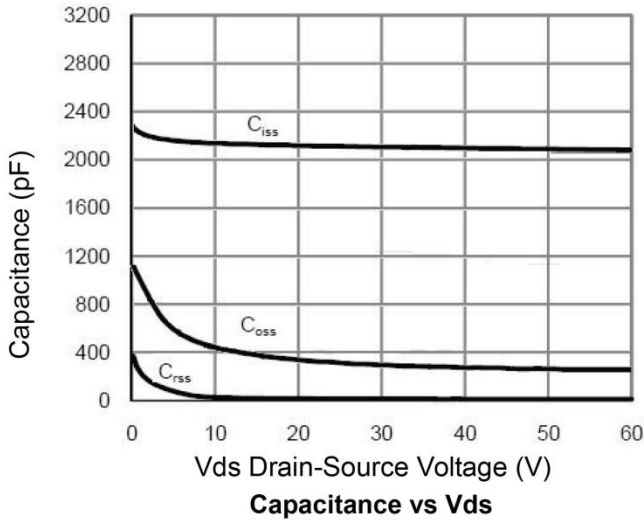
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Static Electrical Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	VGS=0V, ID=250mA	60	-	-	V
Zero Gate Voltage Drain Current	I _{DSS}	VDS=48V, VGS=0V	-	-	1	uA
Gate Leakage Current	I _{GSS}	VGS=±20V, VDS=0V	-	-	±100	nA
Gate Threshold Voltage	V _{GS(th)}	VDS=VGS, ID=250uA	1.0	2.0	3.0	V
Drain-Source On-state Resistance	R _{DS(ON)}	VGS=10V, ID=20A	-	5.5	6.9	mΩ
		VGS=4.5V, ID=10A	-	8.5	11.5	
Dynamic and Switching Characteristics						
Input Capacitance	C _{iss}	VGS=0V, VDS=30V, F=1MHz	-	2083	-	pF
Output Capacitance	C _{oss}		-	793	-	
Reverse Transfer Capacitance	C _{rss}		-	16	-	
Total Gate Charge	Q _g	VDS=30V, VGS=10V, ID=20A	-	37.5	-	nC
Gate-Source Charge	Q _{gs}		-	6.5	-	
Gate-Drain Charge	Q _{gd}		-	10	-	
Turn-on Delay Time	t _{d(ON)}	VDD=30V, ID=20A, VGS=10V, RG=4.7Ω	-	9	-	nS
Turn-on Rise Time	t _r		-	3.5	-	
Turn-off Delay Time	t _{d(OFF)}		-	32	-	
Turn-off Fall Time	t _f		-	5.5	-	
Source-Drain Characteristics						
Diode Forward Voltage	V _{SD}	IS=1A, VGS=0V	-	-	1.2	V

Note :

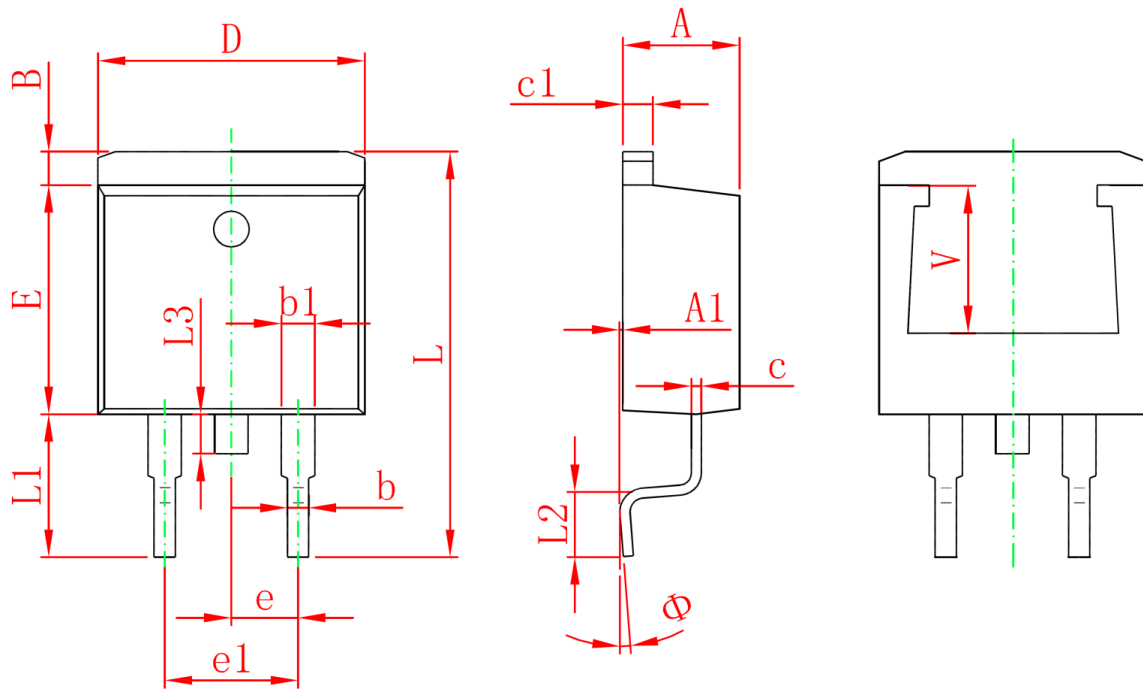
- The EAS data shows Max. rating . The test condition is VDD=30V, VGS=10V, L=0.5mH, RG=25Ω

Typical Characteristics





TO-263 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.470	4.670	0.176	0.184
A1	0.000	0.150	0.000	0.006
B	1.120	1.420	0.044	0.056
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
e	2.540 TYP.		0.100 TYP.	
e1	4.980	5.180	0.196	0.204
L	14.940	15.500	0.588	0.610
L1	4.950	5.450	0.195	0.215
L2	2.340	2.740	0.092	0.108
L3	1.300	1.700	0.051	0.067
Φ	0°	8°	0°	8°
V	5.600 REF.		0.220 REF.	

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